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PRELIMINARY ECOLOGICAL APPRAISAL REPORT

CARMARTHEN WEST SITE

CARMARTHENSHIRE COUNTY COUNCIL

DOCUMENT REF: WWE19177 PEA REV A | 25/10/2019

Client:	Carmarthenshire County Council
Site/Job:	Carmarthen West Site
Report title:	Preliminary Ecological Appraisal Report
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Architect/Agent:	Unknown
Planning reference:	Unknown

VERSIONING AND QUALITY ASSURANCE

Rev	Status	Date	Author(s)	Reviewed by	Approved by
A	Final	25/10/2019	Julie Player MCIEEM Senior Ecologist and Kiani Perera Student CIEEM Assistant Ecologist	Alex Wilson MCIEEM Principal Ecologist	Alex Wilson MCIEEM Principal Ecologist

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The evidence which we have prepared and provided is true, and has been prepared and provided in accordance with the guidance of The Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

SUMMARY

Purpose	• Wildwood Ecology was commissioned by Carmarthenshire County Council (the client) to undertake a Preliminary Ecological Appraisal (PEA) of the Carmarthen West Site • The site is the subject of a planning application to construct residential dwellings onsite.
Work undertaken	• A PEA was undertaken consisting of a desk study and field survey undertaken in September 2019 following the Chartered Institute of Ecology and Environmental Management (CIEEM) Preliminary Ecological Appraisal (2013) guidelines and standard Phase 1 Habitat Survey protocol (JNCC, 2010).
Key issues	• The development may result in impacts on wildlife and habitats affecting the following protected species: ○ Bats ○ Dormice ○ Otter and Fish (via pollution into Tawelan Brook) ○ Badger ○ Reptiles ○ Nesting Birds ○ Hedgehogs ○ Invertebrates ○ Himalayan Balsam

Recommendations

- Depending on the scheme's scope, the following may be required:

Bats:

- Bat Activity Transect Survey – One bat survey transect a month April to October will be required by two ecologists each month. Two static detectors will also be placed onsite for five nights each month between April-October to determine the level of bat activity on site.
- Bat Tree Assessment – A bat tree assessment will be required for any trees that are to be removed as part of the works. Further surveys may be required as a follow onto to this assessment (e.g. bat tree climbing survey).
- If there is to be lighting, there will need to be a lighting plan demonstrating consideration for bats. The construction work for the proposed development should be undertaken during daylight hours and a lighting plan should be produced to demonstrate that any 'exterior' lighting proposed post-development would not have a detrimental effect on bats commuting along nearby habitat.

Common Dormouse:

- A common dormouse nest tube presence or likely absence survey is required.

Otter and Fish:

- An appropriate pollution prevention method statement will be produced to ensure that there is no pollution/run-off into Tawelan Brook where otters and fish are present.

Badger:

- Pre-construction Badger Survey
- Sensitive construction methodology required to ensure no entrapment within excavations, or access to fuel, chemicals or materials. Vigilance for animals during vegetation clearance under ecological guidance

Reptiles:

A reptile mitigation strategy will be produced. The method statement will include the following:

- Two stage persuasion vegetation clearance under the supervision of an ecologist using hand tools only.
- The vegetation is to be cut to 300mm first with the arisings carefully raked off and removed from site.
- The vegetation can then be cut to ground level with the arisings carefully raked and removed off site.
- The vegetation must remain short (at ground level) for the time of construction ensuring the habitat within the site remain unsuitable for reptiles.
- Habitat piles to be created within retained habitat if possible

Nesting Birds:

- If habitats suitable for nesting birds are to be removed, then any vegetation clearance will take place outside of the bird nesting season. In the event that clearance work has to be undertaken during the nesting season (generally from 1st March until 31st August, although birds are known to nest outside of these dates in suitable conditions), a breeding bird survey will be required and must be carried out by a suitably qualified person. Any active nests identified should be protected until the young have fledged. Where a Schedule 1 species (as defined in the Wildlife and Countryside Act - http://www.jncc.gov.uk/page-3614 is involved, compensation for impacts, e.g., loss of nesting sites, should be devised and implemented.

Hedgehog:

- Gaps (13cm x13cm) should be left at the bases of all on-site fences/walls including site boundaries to allow passage of hedgehogs across the site. In addition, cautious working is advised to prevent killing or injury to this species.

Invertebrates:

- Incorporate wildflower areas within the development to provide food sources and stepping stone habitat for invertebrates.

	Himalayan Balsam: • A method statement will be produced to ensure that Himalayan balsam does not spread throughout the site.
Conclusions	• If there is to be removal of hedgerows and trees, the full ecological impacts of the proposed development cannot be fully assessed following the PEA survey alone and further survey work is required. • If there is not to be any such removal and providing that the recommendations outlined within this report are successfully implemented, it should be possible for the proposed development to proceed and for there to be no long-term impacts upon the key protected species present at the site. • This ecological report will remain valid for a period of 18 months from the date of the last survey – i.e. until March 2021.

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1 INTRODUCTION

1.1 Wildwood Ecology was commissioned by Carmarthenshire County Council (the client) to undertake a preliminary ecological appraisal (PEA) of the Carmarthen West Site (the site) centred at grid reference SN 38669 19788.

Site description

1.2 The aerial image of the site (Figure 1) shows the site to consist of predominately improved grassland bordered by fence lines, intact and defunct hedgerows with trees and a road going through the centre of the site. The wider habitat consists of residential dwellings to the south and north east, industrial units to the west and agricultural land to the north and east of the site.

Figure 1 – Aerial image of the site (orange line shows the site boundary). Image used under licence (©2019 Google). Imagery date 27/06/2018.

Proposed development

1.3 The site is the subject of a planning application to construct residential dwellings on the site, with the full extent of the proposals not known at this stage.

Purpose of this report

1.4 The purpose of this report is to provide sufficient information for the local planning authority to fully assess the potential ecological impacts of the proposed development, or to identify what further information is required before a full assessment can be made.

1.5 The result of the PEA has been used to inform whether further surveys are required, or to establish the need for, and extent of, any mitigation or compensation measures required as part of the proposed development.

2 METHODOLOGY

Desk study

2.1 A biodiversity desk study was undertaken in relation to the site in September 2019. The sources consulted and the type of information obtained are summarised in Table 1.

Table 1 – Sources of biodiversity and ecological records.

Source	Information requested (search buffer from site centre/boundary)
West Wales Biodiversity Information Centre (WWBIC)	• Protected and priority species (2km) • Sites of local importance/designation (1km)
Multi-Agency Geographic Information for the Countryside (MAGIC)[1]	• International statutory designations (5km) • National statutory designations (2km)

2.2 The search buffers are considered to be sufficient to cover the potential zone of influence (ZoI[2]) of the proposed development.

2.3 The impact of the proposed development on the biological integrity of any nearby designated protected sites has been fully considered.

2.4 No previous survey information was available for the site itself, though recent development has occurred in the immediate vicinity of the site with these having had ecological survey work carried out.

Field survey

2.5 A field survey was undertaken on 02 September 2019.

2.6 All habitats present within the site with the potential to support rare, protected, or otherwise notable species of flora or fauna (together with any direct signs) were noted.

2.7 In the context of this report, rare, protected, or otherwise notable species of flora or fauna were those considered to meet any of the following criteria:

- Species protected by UK or European legislation (see Appendix V);
- UK Post 2010 UK Biodiversity Framework priority species or Local Biodiversity Action Plan (LBAP) species;
- Nationally rare or nationally scarce species;
- Species of Conservation Concern (e.g. JNCC Red List, RSPB/BTO Red or Amber Lists).

2.8 A PEA habitat map was drawn up incorporating target notes used to highlight features of particular ecological interest (see Appendix I).

2.9 The Wildlife and Countryside Act (1981) as amended, makes it an offence to release or allow to escape into the wild any animal, plant or micro-organism not ordinarily resident in the UK (as listed in Schedule 9 of the Act). Plant species listed in Schedule 9 were searched for during the survey. Examples include species such as Japanese knotweed (*Fallopia japonica*) and Himalayan balsam (*Impatiens glandulifera*).

Surveyor information

2.10 The PEA was undertaken by Julie Player and Kiani Perera. See Table 2 for further information.

[1] http://magic.defra.gov.uk/MagicMap.aspx
[2] ZoI definition – 'the areas/resources that may be affected by the biophysical changes caused by activities associated with a project' (CIEEM, 2016).

Table 2 – Surveyor information.

Surveyor	Licences	Ecological experience
Julie Player B.Sc. (Hons) MCIEEM Senior Ecologist	Bat Dormouse GCN	Holds a first-class honours degree in International Wildlife Biology. Experience in working for ecological consultancies since 2012. Experienced in undertaking bat, dormouse, reptile and great crested newt surveys. Is a licensed bat, dormouse and great crested newt surveyor in England and Wales.
Kiani Perera M.Sc., B.Sc. (Hons.), Student CIEEM Assistant Ecologist	GCN	Holds a 2:1 Honours degree in Wildlife and Plant Biology and a master's in wildlife and Conservation Management. Experienced in ecological management and co-ordination of desk study research. As well as protected habitat and species surveys and mitigation on large and small-scale sites throughout the UK, for both residential and commercial developments. Capable in undertaking out great crested newt, water vole, badger, reptile and bat surveys.

Limitations and assumptions

2.11 The desk study and field survey will not produce a comprehensive list of plants and animals as this will be limited by factors that influence their presence (e.g. activity and dormancy periods). An assessment can however be made of the habitats within the survey area, their nature conservation value and potential to support protected or priority species.

2.12 No other limitations were encountered or assumptions made during either the desk study or the field survey and it is considered that with the access gained and recording undertaken an accurate assessment of the site's ecological value has been made.

3 RESULTS

Desk study

Designated sites (statutory)

3.1 There were two international statutory designations within 5km of the site and three national statutory designations within 2km (see Table 3).

Designated sites (non-statutory)

3.2 There are no local non-statutory designations within 1km of the site (see Table 3).

Table 3 – Summary of designated sites in range of the site.

Site name	Designation	Description / key reason for designation	Distance & direction
Carmarthen Bay and Estuaries	SAC	Designated for its habitats namely, estuaries, shallow inlets and bays, intertidal mudflats and sandflats and subtidal sandbanks. It is also designated for its river and sea lamprey, otter and allis and twaite shad.	2km South East from the site
River Tywi	SAC & SSSI	Designated for its allis and twaite shad, bullhead, river brook and sea lamprey and otter.	1.7km East from the site
Cors Goch, Llanllwch	NNR & SSSI	Cors Gôch is one of the most south-westerly raised bogs in Britain and one of only six large raised bogs in Wales. The bog is the only known site in Carmarthen for the bog bush-cricket Metrioptera brachyptera and for the black sympetrum dragonfly Sympetrum scoticum. The scarce marsh fritillary butterfly Euphydryas aurinia also occurs, as does the attractive scarlet tiger moth Callimorpha dominula.	1.8k west of the site
Maesyprior	SSSI	At Maesyprior a system of well-developed glacial meltwater channels provides important evidence concerning the nature of late Pleistocene geomorphological processes in central South Wales.	1.2km north west from the site

Priority and protected species

3.3 Table 4 summarises the priority and protected species records found within the local area within the last 10 years.

Table 4 – Priority and protected species records found in the vicinity of the site within the last 10 years.

Protected & priority		# of records (# species)			Further information
Groups	Species	Onsite	<500m	>500m	
Bats	Common pipistrelle	-	-	5	1.1km away from site roost
	Soprano pipistrelle	-	1	10	379m away from site – flight record
	Nathusius pipistrelle	-	1	-	379m away from site – flight record
	Unidentified pipistrelle	-	1	11	379m away from site-flight record 1.0km m away from site - roost
	Brown long-eared bat	-	1	5	379m away from site – flight record
	Unidentified *Plecotus*	-	-	1	1.1km away from site – flight record
	Noctule	-	-	4	1.1km away from site – flight record
	Lesser horseshoe bat	-	-	1	1.1km away from site – feeding perch
	Greater horseshoe bat	-	-	1	1.1km away from site - roost
	Natterer's Bat	-	-	2	1.1km away from site – flight record 1.0km away from site - roost
	Whiskered Bat	-	-	1	1.1km away from site – flight record
	Daubenton's Bat	-	-	1	2.1km away from site – flight record
	Barbastelle	-	-	1	1km from site – flight record
	Unidentified *Myotis*	-	1	3	379m away from site – flight record 1.1km away from site - roost
	Unidentified bat	-	-	9	754m away from site – flight record 1.0km away from site - roost
	TOTALS	-	*5 (5)*	*54 (13)*	
Mammals *(excluding bats)*	European otter	-	-	7	1.3km away from site
	European badger	-	-	7	792m away from site
	West European hedgehog	-	2	27	432m away from site
	Polecat	-	-	1	960m from site
	Weasel	-	-	1	1.8km from site
	Hare	-	-	2	1.2km from site
	Grey Seal	-	-	1	1.9km from site
	TOTALS	-	*2 (1)*	*46 (7)*	

Protected & priority		# of records (# species)			Further information
Groups	Species	Onsite	<500m	>500m	
Amphibians	Toad/frog	-	-	7 (2)	409m away from site species include common toad and frog.
Reptiles	Adder	-	-	5	2.4km away from site
	Common lizard	-	-	2	1.2km away from site
	Slow worm	-	-	3	1.3km away from site
	TOTALS	-	-	*10 (3)*	
Birds	Schedule 1	- (-)	- (-)	27 (12)	Schedule 1 species: Species recorded include Barn Owl, Kingfisher, Merlin, Little Ringed Plover, Redwing, Fieldfare, Red Kite, Green Sandpiper, Red-necked Phalarope, Marsh Harrier, Cetti's Warbler and Peregrine. The closest record is of the Little Ringed Plover located 812m from site.
	Non-schedule 1	- (-)	13 (5)	52(10)	Closest Records: Species recorded include Dunnock, Starling, Song Thrush, House Sparrow, Herring Gull, Reed Bunting, Yellow Hammer, Linnet, Black-headed Gull, Grasshopper Warbler, Curlew, Marsh Tit, Willow Tit, Bullfinch and Lapwing. The closest records were located 162m from the site of the Dunnock, Herring Gull, House Sparrow, Song Thrush and Reed Bunting.
Invertebrates	Totals:	- (-)	- (-)	62 (44)	Invertebrate species: Marsh fritillary butterfly is located 2.5km away from site. The closest records are of the Brown-banded Carder-bee, Red-Shanked Carder-bee and Long-horned bee 530m from site. Other species recorded include a variety of moth species the ash pug, bearded chestnut moth, brown hairstreak, cinnabar, small purple and gold, rosy minor and rustic.
Fish	Totals:	-(-)	-(-)	4(3)	Closest record is of an Eel located 950m from the site. Other species recorded include Atlantic Salmon and Brown/Sea Trout.
Plants		-(-)	-(-)	41(4)	Cornflower, Bluebell, Tubular Water-Dropwort and Sea Barley. The closest record was of Bluebell 740m from site.

Protected & priority		# of records (# species)			Further information
Groups	Species	Onsite	<500m	>500m	
Lichen	Totals:	-(-)	-(-)	1(1)	Parmotrema perlatum recorded 1.1km from site.
Liverworts	Totals:	-(-)	-(-)	1(1)	Ribbonwort recorded 1km from the site.

Field survey

Timing and conditions

3.4 Prevailing weather conditions during the field survey are summarised within Table 5.

Table 5 – Summary of weather conditions during the PEA.

Date	Weather conditions			
	Temp [°C]	Cloud cover [Oktas]	Wind speed [Beaufort scale]	Rain
02/09/2019	16	6	2	-

3.5 The distribution and extent of habitats observed within the site is illustrated in the PEA plan (see Appendix I). An accompanying species list (including scientific names) can be found in Appendix IV.

3.6 The habitats present onsite are described in detail in Table 6 using the standard Phase 1 survey habitat classification hierarchical alphanumeric reference codes (JNCC, 2010).

3.7 Please also refer to Table 6 for a list and description of the onsite target notes. The positions for these target notes are highlighted in the PEA plan in Appendix I.

3.8 The site was classified according to the following habitat types: Improved grassland, tall ruderal, dense scrub, poor semi-improved grassland, hedgerows (species rich continuous and defunct and hedgerows with trees), ephemeral short perennial, bare ground, dry ditch, fence line and road.

Table 6 – Habitats and linear features present onsite.

Habitat type / Linear feature	Species present	Other observations
B4 Improved grassland The eastern and western fields of the site are predominately made up of improved grassland bordered by hedgerows and fence lines.	Perennial rye grass, Yorkshire fog, cock's-foot, annual meadow-grass, timothy grass, dandelion, sorrel sp, cat's-tail, yarrow, meadow buttercup, lesser stitchwort, white Clover and Broadleaved Dock	• Himalayan balsam was recorded within the north western corner of the western field (TN1) • A rubble pile suitable for reptiles was located within the south western corner of the eastern field (TN5) • The grassland and its verges are suitable to support reptiles.
B2.2 Semi-improved neutral grassland Poor semi-improved grassland was located along the dry ditch on the eastern boundary of the western field.	Yorkshire fog, perennial rye grass, creeping and meadow buttercup, silverweed, red campion, broadleaved dock, soft rush, spear thistle, common nettle, willowherb sp.	• Ditch was dry at the time of the survey
J2.3.1 Native species-rich, hedge and trees A species rich hedgerow with trees was located around the western and south boundary of the site.	Hazel (fruiting), willow, bramble, holly, hawthorn, oak, ash, maple sp and hedge bindweed.	• Hedgerow is suitable to support dormice and commuting bats. • One tree (large ash) within the south eastern corner of the western field was recorded as have bat roost potential (TN3)
J2.1.1 Native species-rich, intact hedge Intact species rich hedgerow is located along the western boundary of the eastern field	Willow, blackthorn, bramble, rose sp, hawthorn, hazel, elder, oak	• Hedgerow is suitable to support dormice and commuting bats
J2.2.1 Native species-rich, defunct hedge Located on the north and eastern boundary of the eastern field	Same species as above	• Hedgerow is suitable to support dormice and commuting bats
C3.1 Tall ruderal Was located around the boundary of the grassland in the western field and the north and eastern boundary of the eastern field	Common nettle, rosebay willowherb, hedge woundwort, red campion, broadleaved dock, burdock, Yorkshire fog and hogweed.	• Habitat is good for reptiles and nesting birds
A2.1 Dense/Continuous Scrub Was located within the north eastern corner of the eastern field	Bramble, ragwort, spear thistle, deadnettle creeping thistle, broadleaved dock.	• Habitat is good for commuting dormice and nesting birds.
J2.6 Dry Ditch Located outside of the western field fence line between the field and the road and was vegetated with poor semi-improved grassland.	See semi-improved neutral-grassland for a species list	• The ditch was dry at the time of the survey
J1.3 Ephemeral Short Perennial Located on earth banks adjacent to both the eastern and west field. Areas of bare ground sparsely vegetated, loosely stoned	Ribwort and broadleaved plantain, and white clover.	• Optimal habitat for basking reptiles

Habitat type / Linear feature	Species present	Other observations
J4 Bare ground *Located along the western boundary of the eastern field*		• Optimal habitat for basking reptiles
J2.4 Fence Chicken wire and wooden post fencing was located around the north and eastern boundary of the western field		
J5 Other A road was located between the eastern and western fields. Area of earth bank located on the western side of the eastern field were dominated with broadleaved dock and sorrel species (TN4).	Earth Bank – Broadleaved and ribwort plantain, broadleaved dock and oxeye daisy.	• Earth bank – suitable to support basking reptiles.

Invasive species

3.9 A stand of Himalayan balsam was identified onsite within the north western corner of the western field.

Onsite fauna

3.10 The presence of the following species were observed or detected around the site during the survey: Meadow pipit, song thrush, robin, peacock butterfly and rabbits.

4 INTERPRETATION AND ASSESSMENT

4.1 The proposed development will require displacement of onsite habitats and disturbance to their associated features. This section concerns an assessment of ecological impacts resulting from the proposed development.

4.2 The following interpretation and assessment is provided to ensure full compliance with both UK and European legislation and both local and national planning policy (see Appendix V).

Designated sites

4.3 There were statutory designated sites identified within the vicinity of the site (see Table 3). The closest statutory site was the River Tywi which was located 1.7km from the site and designated for its allis and twaite shad, bullhead, river brook and sea lamprey and otter.

4.4 Given the scale of the proposed development, and the lack of likely impacts beyond the site boundary, the nearby designated sites are sufficiently well separated so that no impacts on their designated features are anticipated as a result of the works.

Priority and protected habitats

4.5 The following priority habitats (as listed in Section 7 of the Environment (Wales) Act 2016) were present onsite: hedgerows.

4.6 The hedgerows located around the boundaries of the fields are suitable to support commuting and roosting bats, nesting birds and dormice.

Priority and protected species

4.7 The following priority species (as listed in Section 7 of the Environment (Wales) Act 2016) were present or likely to be present onsite: Bats, dormice, reptiles, nesting birds, otter and hedgehogs.

Bats

4.8 The local records search returned a number of records for bat species in the vicinity of the site (see Table 4).

4.9 Previous survey of the parcel of land to the south found that the southern boundary hedgerow is used by commuting and foraging bats.

4.10 The habitats onsite provide suitable commuting (hedgerows), foraging (grassland, trees and hedgerows) and roosting habitat for bats.

4.11 The site is within a relatively dark area of the county, with low to moderate radiance levels indicating relatively low levels of light pollution (see Figure 2).The relatively dark hedgerows and treelines within the local area, and running across the site are therefore likely to be used by a variety of bat species, with both light tolerant (e.g. pipistrelle) and light-sensitive species (e.g. horseshoes, *Myotis* sp) potentially using the site.

4.12 Depending on the amount of impact to hedgerows and treelines across the site, and lighting to be installed, there will be a negative impact on bat species as a result of the proposed development. There is likely to be a minor impact through loss of foraging habitat also.

4.13 There may also be a loss of bat roosts, if there is to be a removal of the trees with bat features present upon them.

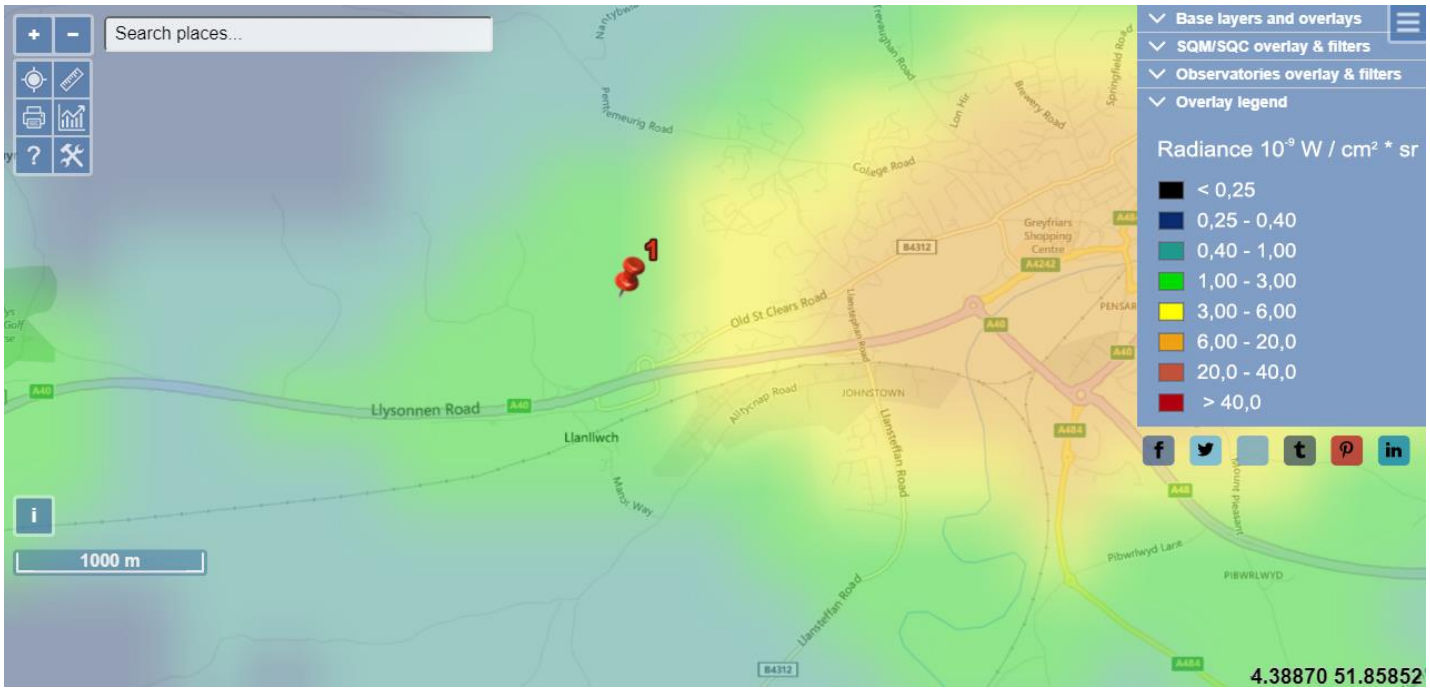

Figure 2 – Light pollution (radiance) at the site is low-moderate with a value of 2.4 x10^{-9} W cm^{-2} *sr

Common dormouse

4.14 Dormice are known to be present within the wider Carmarthenshire area, though the local records search returned no records for common dormouse in the vicinity of the site (see Table 4).

4.15 A dormouse survey was carried out for the development site to the south of the application site, and none were found (Pryce Ecology Ltd, 2008).

4.16 The hedgerows around the boundaries of the fields offer suitable foraging, nesting and commuting habitat for dormice. The hedgerow along the western boundary of the western field supports large fruiting hazel vegetation which is an important food source for dormice.

4.17 There will be a negative impact on common dormouse as a result of the proposed development, if the hedgerows are removed, and connectivity is lost.

European otter

4.18 The local records search returned a number of records for European otter in the vicinity of the site (see Table 4).

4.19 Otter have been recorded within the River Tywi which is located 1.7 km away and are also known to be present within Tawelan Brook located approximately 100m from the site.

4.20 There may be a negative impact on European otter as a result of the proposed development without appropriate mitigation and pollution protection measures in place due to the proximity of Tawelan Brook to the site.

Great crested newt

4.21 The local records search returned no records for great crested newt in the vicinity of the site (see Table 4).

4.22 Habitat onsite is suitable to support great crested newts during their terrestrial phase (hedgerows, rubble piles etc..), however there are no suitable great crested newt breeding ponds onsite or within 500m of the site.

4.23 There is unlikely to be a negative impact on great crested newt as a result of the proposed development.

Reptiles

4.24 The local records search returned a number of records for reptile species in the vicinity of the site (see Table 4), and slow worm has been recorded immediately adjacent to the site.

4.25 The site is suitable to support foraging, commuting and resting reptiles within the margins of the fields, and within rubble piles.

4.26 Given the proximity of the local record, and linkages from this to the application site, it can be assumed that reptiles are present onsite. Therefore there will be a negative impact on reptile species as a result of the proposed development.

Nesting birds

4.27 The local records search returned a number of records for nesting bird species in the vicinity of the site, including some Schedule 1 designated species (see Table 4). In addition, several bird species were encountered onsite during the PEA.

4.28 The trees and hedgerows on site are suitable to support nesting Non-Schedule 1 species and also some of the wintering Schedule 1 birds identified in the data search, namely redwing and fieldfare. The grassland will also provide suitable foraging opportunities for barn owl (margins where grassland is longer ad hospitable to prey items such as vole), and raptors. Other Schedule 1 species identified during the data search are unlikely to be found onsite as they are associated with more wetland habitats.

4.29 There will be a negative impact on nesting bird species as a result of the proposed development, due to disturbance and potential removal of suitable nesting habitat.

European badger

4.30 The local records search returned a number of records for European badger in the vicinity of the site with a previous survey report observing a badger sett within the local area, though this hole was disused in 2010 (Hawkeswood Ecology, 2010).

4.31 The site offers suitable foraging and commuting habitat for badgers, however no evidence of the presence of badger was recorded onsite during the survey, with no clear pathways, latrines, hairs, snuffle holes or setts observed.

4.32 There is unlikely to be a negative impact on European badger as a result of the proposed development, if appropriate. However European badger can move onto a site at any time.

West European hedgehog

4.33 The local records search returned a number of records for west European hedgehog species in the vicinity of the site (see Table 4).

4.34 Hedgerows and grassland habitat onsite are suitable to support foraging, commuting and nesting hedgehogs onsite.

4.35 There will be a negative impact on west European hedgehog as a result of the proposed development, due to a loss of vegetated connectivity (if the hedges are to be removed) and through direct killing/injury during any clearance works.

Fish

4.36 The local records search returned a number of records for fish in the vicinity of the site (see Table 4).

4.37 There are no waterbodies on site, therefore it is not suitable to support fish. However, Tawelan Brook is located within 100m from the site.

4.38 Without appropriate pollution control methods there is potential for pollution/run off to enter the brook which may have a negative impact on the fish that are present.

Invertebrates

4.39 The local records search returned a number of records for invertebrate species in the vicinity of the site (see Table 4).

4.40 The site is suitable to support a range of invertebrate species including butterflies, bees and moths which were recorded within the data search. Marsh Fritillary were recorded within the data search; however, no devil's-bit scabious was recorded onsite.

4.41 The site may support Brown Hairstreak, Cinnabar, Red Shanked Carder Bee, Rosy Minor, Rustic and Long Horned Carder Bee as the site support habitats and food sources associated with these species (e.g, Hedgerows, bare ground and grassy habitats and blackthorn, bramble, clovers and dock)

4.42 There will be a negative impact on invertebrate species as a result of the proposed development due to loss of habitat and food sources.

Invasive species

4.43 There was one stand of Himalayan balsam found onsite. This is an example of an invasive plant species included in Schedule 9 of the Wildlife and Countryside Act (1981), as amended. Without appropriate mitigation Himalayan balsam could spread within the site.

Impacts of proposed development

4.44 Table 7 summarises the impacts of the proposed development on protected species that are or may be present onsite.

Table 7 – Indicative potential impacts of the proposed development affecting onsite protected species.

Species	Negative impact* (plus scale and nature of impact)
Bats	Yes – Loss of bat roost within trees and loss of commuting and foraging habitat. Risk of killing, injury and disturbance during the vegetation clearance. Lighting from development likely to cause disturbance.
Common dormouse	Yes – Risk of killing and injury during vegetation clearance and loss of habitat
European otter	Yes – via pollution into Tawelan Brook; construction related impacts (entrapment, injury)
Fish	Yes – via pollution into Tawelan Brook
Great crested newt	No
Reptiles	Yes – Risk of killing or injuring during vegetation clearance and loss of habitat
Nesting birds	Yes – Risk of killing, injury and disturbance during vegetation clearance and loss of habitat
European badger	Yes - Construction related impacts (entrapment, injury)
West European hedgehog	Yes – Risk of killing and injury during vegetation clearance and loss of habitat
Invertebrates	Yes – loss of habitat

*Ultimate assessment of the scale and nature of impacts is dependent upon on final design of proposed development and exact habitats affected.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Wildwood Ecology was commissioned to undertake a Preliminary Ecological Appraisal (PEA) of Carmarthen West Site

5.2 The site is the subject of a planning application to construct residential dwellings onsite.

Designated sites

5.3 Designated sites in the vicinity of the site (see Table 3) are sufficiently well separated so that no impacts on their designated features are anticipated as a result of the proposed development.

Protected species

5.4 Recommendations regarding protected species are shown in Table 8.

5.5 If the trees and hedgerows can be retained and depending on the scale of the development, then these surveys may not be required.

Table 8 – Recommendations.

Species	Recommendations
Bats	Bat Activity Transect Survey – One bat survey transect a month April to October will be required by two ecologists each month. Two static detectors will also be placed onsite for five nights each month between April-October to determine the level of bat activity on site. Bat Tree Assessment – A bat tree assessment will be required for any trees that are to be removed as part of the works. Further surveys may be required as a follow onto to this assessment (bat tree climbing survey etc.) If there is to be lighting, there will need to be a lighting plan demonstrating consideration for bats. The construction work for the proposed development should be undertaken during daylight hours and a lighting plan should be produced to demonstrate that any 'exterior' lighting proposed post-development would not have a detrimental effect on bats commuting along nearby habitat.
Common dormouse	A common dormouse nest tube presence or likely absence survey is required.
European otter and fish	No further surveys required. An appropriate pollution prevention method statement will be required to ensure that there is no pollution/run-off into Tawelan Brook where otters and fish are present.
Great crested newt	No further surveys required.
Reptiles	A reptile (and amphibian) mitigation strategy will be produced. The method statement will include the following: • Two stage persuasion vegetation clearance under the supervision of an ecologist using hand tools only. • The vegetation is to be cut to 300mm first with the arisings carefully raked off and removed from site. • The vegetation can then be cut to ground level with the arisings carefully raked and removed off site. • The vegetation must remain short (at ground level) for the time of construction ensuring the habitat within the site remain unsuitable for reptiles. • Habitat piles to be created within retained habitat if possible
Nesting birds	If habitats suitable for nesting birds are to be removed, then any vegetation clearance will take place outside of the bird nesting season. In the event that clearance work has

	to be undertaken during the nesting season (generally from 1st March until 31st August, although birds are known to nest outside of these dates in suitable conditions), a breeding bird survey will be required and must be carried out by a suitably qualified person. Any active nests identified should be protected until the young have fledged. Where a Schedule 1 species (as defined in the Wildlife and Countryside Act - http://www.jncc.gov.uk/page-3614 is involved, compensation for impacts, e.g., loss of nesting sites, should be devised and implemented.
European badger	Pre-construction Badger Survey (At least 10 weeks before construction) Sensitive construction methodology required to ensure no entrapment within excavations, or access to fuel, chemicals or materials. Vigilance for animals during vegetation clearance under ecological guidance
West European hedgehog	No further surveys required. Gaps (13cm x13cm) should be left at the bases of all on-site fences/walls including site boundaries to allow passage of hedgehogs across the site. In addition, cautious working is advised to prevent killing or injury to this species.
Invertebrates	No further surveys required. Incorporate wildflower areas within the development to provide food sources and stepping stone habitat for invertebrates. Species that could be planted include: • Bugle • Clovers • Comfrey • Common Birds Foot Trefoil • Bramble • Blackthorn • Honeysuckle • Lavender • Foxglove • Scabious • Borage • Ground Ivy
Himalayan Balsam	Produce a method statement for works to ensure that Himalayan Balsam does not spread throughout the site.

Biodiversity enhancement

5.6 Local Authorities have a duty (known as the 'Biodiversity and resilience of ecosystems duty') under the Environment (Wales) Act 2016 to seek to maintain and *enhance* biodiversity in the exercise of their functions.

5.7 Where possible the existing onsite habitat will be retained to ensure that species are not adversely affected by the development. Native species of local provenance will be used for any new planting on the site to support The Action Plan for Pollinators in Wales, 2013 (http://gov.wales/docs/desh/publications/130723pollinator-action-plan-en.pdf).

5.8 The Flood and Water Management Act 2010 (Schedule 3), which comes into effect in Wales on 7 January 2019, requires new developments to include Sustainable Drainage Systems (SuDS) features that comply with national standards. The development could achieve this by providing rain gardens, rainwater fed planting bed and swales as part of a sustainable drainage system. The planting of the rain gardens and swales will provide an enhancement of the site with respect to biodiversity with native species mixes proposed (see table below):

Item	Planting recommendations
Rain garden	Yellow flag - *Iris pseudocorus* – prefers wetter areas – plant near inlet – yellow flowers Soft rush – *Juncus effuses* – prefers wetter areas – plant near inlet – grey/green foliage Meadowsweet - *Filipendula vulgaris* – sweet scented, white flowers

	Male fern - *Dryopteris felix-mas* – prefers shady areas – green foliage Bugle – *Ajuga reptans* – low growing, plant at edges – purple/blue flowers Hemp agrimony - *Eupatorium cannabinum* – taller plant – pink flowers Clustered bellflower – *Campanula glomerata* – purple flowers Cowslip – *Primula vulgaris* – yellow/cream flowers *Householders to be advised of the rain garden's functions and maintenance requirements (see appended Rain Garden Guide). Fertilisers and pesticides are not to be used.*
Swale	Seed mix of 20% wildflowers, 80% grasses, as agreed with the LPA ecologist: Wildflowers 0.5% *Achillea ptarmica* Sneezewort 1.0% *Alisma plantago-aquatica* Water-Plantain 2.0% *Angelica sylvestris* Wild Angelica 1.0% *Cardamine pratensis* Cuckoo Flower 1.0% *Dipsacus fullonum* Teasel 1.0% *Eupatorium cannabinum* Hemp Agrimony 2.5% *Filipendula ulmaria* Meadowsweet 1.0% *Mentha aquatica* Water Mint 1.0% *Myosotis scorpiodes* Water Forget-Me-Not 2.5% *Iris pseudacorus* Yellow Iris 1.5% *Lotus pedunculatus* Greater Birdsfoot Trefoil 1.0% *Lychnis flos-cuculi* Ragged Robin 1.7% *Lycopus europaeus* Gypsywort 1.0% *Lythrum salicaria* Purple Loosestrife 0.3% *Pulicaria dysentrica* Fleabane 1.0% *Succisa pratensis* Devil's Bit Scabious Grasses (w = wild) 8.0% *Agrostis stolonifera* (w) Creeping Bent 4.0% *Alopecurus pratensis* (w) Meadow Foxtail 2.0% *Anthoxanthum odoratum* (w) Sweet Vernal Grass 1.0% *Briza media* (w) Quaking Grass 40.0% *Cynosurius cristatus* Crested Dogstail 1.0% *Deschampsia cepitosa* (w) Tufted Hair-Grass 24.0% *Festuca rubra ssp juncea* (w) Slender Creeping Red Fescue Similar mixes are commercially available as EM8 or EP1 from Emorsgate Seeds Ltd. *Seed to be sown at a rate of 5g per m^2* *Seed to be sown in early autumn or in spring, when the ground is not waterlogged, with a seedbed prepared (weed-free with a medium tilth soil). Seed to be rolled/treaded in but not covered over and kept moist.* *Management will require a first year mowing to 60mm height to allow establishment of seedlings over any "weeds". Subsequent cuts should be undertaken in summer (late July/August) after flowering and seed formation. The risings should be allowed to dry on the ground and then raked off after up to a week.*

5.9 Bird nesting boxes and bat roosting boxes will be integrated into the design of 30% of all new structures within the proposed development.

5.10 Where possible the existing onsite habitat will be retained to ensure that species are not adversely affected by the development. Native species of local provenance will be used for any new planting on the site to support The

Action Plan for Pollinators in Wales, 2013 (https://www.biodiversitywales.org.uk/Wales-Action-Plan-for-Pollinators).

Overall conclusion

5.11 **If there is to be removal of hedgerows and trees, the full ecological impacts of the proposed development cannot be fully assessed following the PEA survey alone and further survey work is required.**

5.12 **If there is not to be any such removal and providing that the recommendations outlined within this report are successfully implemented, it should be possible for the proposed development to proceed and for there to be no long-term impacts upon the key protected species present at the site.**

This ecological report will remain valid for a period of 18 months from the date of the last survey - i.e. until March 2021. Further surveys may be required to update the site information if planning is not obtained or works do not commence within this time period.

6 REFERENCES

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Collins, J. (ed.) (2016) Bat surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

Chartered Institute of Ecology and Environmental Management (April, 2013) Guidelines for Preliminary Ecological Appraisal. CIEEM, Winchester.

Hawkeswood Ecology (2010) Extended Phase 1 Habitat Survey

Institute for Environmental Assessment (1995). Guidelines for Baseline Ecological Assessment. E & FN Spon, Hong Kong.

Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey; A technique for environmental audit. Reprinted by JNCC, Peterborough.

Light Pollution (2019). www.lightpollutionmap.info [Accessed 24/10/2019]

APPENDIX I: PEA PLAN

APPENDIX II: SURVEY IMAGES

Figure 3: Improved Grassland

Figure 4: Tall ruderal and hedgerow on the western boundary of the site

Figure 5: Fence line along the north western boundary

Figure 6: Himalayan balsam located in the north western corner of the site

Figure 7: Mature ash tree with bat roost potential

Figure 8: Tall ruderal earth bank in the south eastern corner of the western field - reptile suitability

Figure 9: Dry ditch, vegetated by poor semi improved grassland along the eastern boundary of the western field adjacent to the road

Figure 10: Ephemeral short perennial habitat

Figure 11: Bare ground in eastern field

Figure 12: Hedgerow and bare ground in eastern field

Figure 13: Earth bank in eastern field with areas of bare earth and vegetated with dock and sorrel

Figure 14: Tree with bat roost potential on eastern boundary of the site (eastern field)

Figure 15: Rubble piles in eastern field

Figure 16: Dominated species are broadleaved dock and sorrel along the bank/road verge of the eastern field.

APPENDIX III: SPECIES LIST

To be submitted to the appropriate Local Records Centre

Site Name: Carmarthen West Site
Grid ref: SN 38669 19788
Provided by: Wildwood Ecology Ltd
Verified by: Julie Player

Common name	Scientific Name (if known)	Number	Comment
Meadow pipit	*Anthus pratensis*	3	
Song thrush	*Turdus philomelos*	1	
Robin	*Erithacus rubecula*	1	
Peacock butterfly	*Aglais io*	1	
Rabbit	*Oryctolagus cuniculus*	1	
Perennial rye grass	*Lolium perenne*		
Yorkshire fog	*Holcus lanatus*		
Cock's-foot	*Dactylis glomerata*		
Annual meadow-grass	*Poa annua*		
Timothy grass	*Phleum pratense*		
Dandelion	*Taraxacum officinale agg.*		
Sorrel sp	*Rumex sp*		
Cat's-tail	*Phleum bertolonii*		
Yarrow	*Achillea millefolium*		
Meadow buttercup	*Ranunculus acris*		
Lesser stitchwort	*Stellaria graminea*		
White clover	*Trifolium repens*		
Broadleaved dock	*Rumex obtusifolius*		
Creeping buttercup	*Ranunculus repens*		
Hazel	*Corylus avellana*		
Rosebay willowherb	*Chamerion angustifolium*		
Blackthorn	*Prunus spinosa*		
Oxeye daisy	*Leucanthemum vulgare*		
Silverweed	*Potentilla anserina*		
Red campion	*Silene dioica*		
Soft rush	*Juncus effusus*		
Spear thistle	*Cirsium vulgare*		
Common nettle	*Urtica dioica*		
Willow	*Salix spp.*		
Bramble	*Rubus fruticosus agg.*		
Holly	*Ilex aquifolium*		
Hawthorn	*Crataegus monogyna*		
Oak	*Quercus spp.*		
Ash	*Fraxinus excelsior*		
Maple sp	*Acer sp*		
Hedge bindweed	*Calystegia sepium*		
Hedge woundwort	*Stachys sylvatica*		
Lesser burdock	*Arctium minus*		
Hogweed	*Heracleum sphondylium*		
Bramble	*Rubus fruticosus agg.*		
Rose sp	*Rosa spp.*		
Elder	*Sambucus nigra*		

APPENDIX IV: PLANNING POLICY AND LEGISLATION

The following local and national planning policy and both primary and European legislation relating to nature conservation and biodiversity status are considered of relevance to the current proposal.

Planning and biodiversity

Local Authorities have a requirement to consider biodiversity and geological conservation issues when determining planning applications under the following planning policies.

Planning Policy Wales (2018) and Technical Advice Note 5 (2009)

Planning Policy Wales (Edition 10, November 2018) sets out the land use planning policies of the Welsh Government, with integrating with the Environment (Wales) Act (2016). The advice contained within Planning Policy Wales (PPW) is supplemented for some subjects by Technical Advice Notes (TAN's).

TAN 5 (Welsh Government, 2009) specifically provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. The TAN provides advice for local planning authorities on the key principles of positive planning for nature conservation; nature conservation and Local Development Plans; nature conservation in development management procedures; development affecting protected internationally and nationally designated sites and habitats; and development affecting protected and priority habitats and species.

Under Section 2.4 within the TAN 5, 'when deciding planning applications that may affect nature conservation local planning authorities should':

- Pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long term perspective;
- Contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment;
- Promote the conservation and enhancement of statutorily designated areas and undeveloped coast;
- Ensure that appropriate weight is attached to designated sites of international, national and local importance;
- Protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;
- Ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of development on nature conservation;
- Ensure that the range and population of protected species is sustained;
- Adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered;

Legislation and biodiversity

Certain species of animals and plants found in the wild in the UK are legally protected from being harmed or disturbed. These species are listed in the Wildlife and Countryside Act 1981 (as amended) or are named as European Protected Species (EPS) in the Conservation of Habitats and Species Regulations 2017. These two main pieces of legislation have been consulted when writing this report and are therefore described in detail within this section.

Other relevant legislation and policy documents that have been consulted include – The Environment (Wales) Act 2016; The Countryside and Rights of Way Act 2000; The Hedgerow Regulations 1997; Biodiversity Action Plans, both UK-wide (UKBAP) and Local plans (LBAPs), and The National Planning Policy Framework (NPPF).
There is also legislation that legally protects certain animals - for example, the Protection of Badgers Act (1992) protects badgers and their setts, and the Deer Act (1991) places restrictions on actions that can be taken against deer species.

Environment (Wales) Act 2016

Section 6 of the Act places a duty on public authorities to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to 'promote the resilience of ecosystems'. The duty replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, and applies to those authorities that fell within the previous duty.

Public authorities will be required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience.

Section 7 replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

The Welsh Ministers must also take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section and encourage others to take such steps.

Wildlife & Countryside Act 1981 (as amended)

The Wildlife & Countryside Act 1981 (as amended) [WCA] is the primary legislation for England and Wales for the protection of flora, fauna and the countryside. Part I within the Act deals with the protection of wildlife.

Most European Protected Species offences are now covered under the Conservation of Habitats and Species Regulations (see below), but some 'intentional' acts are still covered under the WCA, such as obstructing access to a bat roost.

The WCA prohibits the release to the wild of non-native animal species listed on Schedule 9 (e.g. Signal Crayfish and American Mink). It also prohibits planting in the wild of plants listed in Schedule 9 (e.g. Japanese Knotweed and Rhododendron ponticum) or otherwise deliberately causing them to grow in the wild. This is to prevent the release of invasive non-native species that could threaten our native wildlife.

The provisions relating to animals in the Act only apply to 'wild animals'; these are defined as those that are living wild or were living wild before being captured or killed. It does not apply to captive bred animals being held in captivity.

There are 'defences' provided by the WCA. These are cases where acts that would otherwise be prohibited by the legislation are permitted, such as the incidental result of a lawful operation which could not be reasonable avoided, or actions within the living areas of a dwelling house.

Licensing: certain prohibited actions under the Wildlife and Countryside Act may be undertaken under licence by the proper authority. For example, scientific study that requires capturing or disturbing protected animals can be allowed by obtaining a licence – e.g. bat surveys.

Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 (which are the principal means by which the EC Habitats Directive is transposed in England and Wales) update the legislation and consolidate all the many amendments which have been made to the Regulations since they were first made in 1994.

These regulations provide for the:

- protection of European Protected Species [EPS] (animals and plants listed in Annex IV Habitats Directive which are resident in the wild in Great Britain) including bats, dormice, great crested newts, and otters;
- designation and protection of domestic and European Sites - e.g. Site of Special Scientific Interest [SSSI] and Special Area of Conservation [SAC]; and
- adaptation of planning controls for the protection of such sites and species.

Public bodies (including the Local Planning Authority) have a duty to have regard to the requirements of the Habitats Directive in exercising their function – i.e. when determining a planning application.

There is no defence that an act was the incidental and unavoidable result of a lawful activity.

Licensing: it is possible for actions which would otherwise be an offence under the Regulations to be undertaken under licence issued by the proper authority. For example, where a European Protected Species has been identified and the development risks deliberately affecting an EPS, then a 'development licence' may be required.

Species protection

The following protected species information is relevant to this report. Legislation is only discussed in relation to planning and development; other offences may exist.

Amphibians

The common frog, common toad, common newt, and palmate newt receive limited protection under the Wildlife and Countryside Act 1981 (as amended), making it illegal to sell or trade them.

The Great Crested Newt and Natterjack Toad are fully protected under the Conservation of Habitats and Species Regulations 2017 as European Protected Species. It is illegal to:

- Deliberately capture, injure, kill, or disturb either species,
- Intentionally or recklessly obstruct access to any structure/place used for shelter or protection, or
- Damage or destroy a breeding site or resting place.

Badger

Badgers are protected in the UK under the Protection of Badgers Act 1992. Under the act it is an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat[3] a Badger, or attempt to do so;
- To intentionally or recklessly interfere with a sett[4] (this includes disturbing Badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it).

The legislation aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain; it is not intended to prevent properly authorised development.

[3] The intentional elimination of sufficient foraging area to support a known social group of Badgers may, in certain circumstances, be construed as an offence by constituting "cruel ill treatment" of a Badger

[4] A sett is defined as "any structure or place which displays signs indicating current use by a Badger". Advice issued by Natural England (June 2009) is that a sett is protected as long as such signs remain present, which in practice could potentially be for some time after the last actual occupation by Badger.

Bats

All British bats are classed as European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2017, making it an offence inter alia to:

- Deliberately kill, injure or capture a bat;
- Deliberately disturb bats;
- Damage or destroy a breeding site or resting place of a bat.

In addition, all British bats are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which any bat uses for shelter or protection; or
- Disturb any bat while occupying a structure or place which it uses for that purpose.

If proposed development work is likely to destroy or disturb bats or their roosts, then a licence will need to be obtained from Natural Enlgand, which would be subject to appropriate measures to safeguard bats.

Birds

In the UK, the provisions of the Birds Directive are implemented through the Wildlife & Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2017. All wild birds, their nests and eggs are protected it an offence to:

- kill, injure, or take any wild bird;
- take, damage or destroy the nest of any such bird whilst it is in use or being built; or
- take or destroying an egg of any such wild bird.

The law covers all species of wild birds including common, pest or opportunistic species.

Special protection against disturbance during the breeding season is also afforded to those species listed on Schedule 1 of the Act.

Dormice

The common dormouse is classed as a European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2017, making it an offence inter alia to:

- Deliberately capture, injure, or kill a dormouse;
- Deliberately disturb dormice;
- Damage or destroy a breeding site or resting place of a dormouse.

In addition, the dormouse is listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which a dormouse uses for shelter or protection; or
- Disturb a dormouse while occupying a structure or place which it uses for that shelter or protection.

Otters

The European Otter, *Lutra lutra* is a European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2017, making it an offence inter alia to:

- deliberately capture, injure or kill any wild otter;
- deliberately disturb wild otters;
- damage or destroy a breeding site or resting place of an otter.

In addition, the otter is listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- disturbs an otter while it is occupying a structure or place which it uses for shelter or protection; or
- obstructs access to such a place.

If proposed development work is likely to destroy or disturb otters or their resting places, then a licence will need to be obtained from Natural Resource Wales, which would be subject to appropriate measures to safeguard otters.

Reptiles

Adders, slow worms, grass snakes and common lizards are protected against killing and injuring under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). This legislation makes it illegal to intentionally kill or injure a common reptile. As a result, reptiles must be removed from areas of development and relocated onto suitable release sites before any site works can commence.

Smooth snakes and sand lizards are European Protected Species under schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017. This makes it illegal to carry out the following activities:

- Deliberately or recklessly disturb, capture or kill these animals;
- Deliberately or recklessly take or destroy eggs of these animals;
- Damage or destroy a breeding site or resting place of such a wild animal; or

Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead animal, or any part of, or anything derived from such a wild animal.